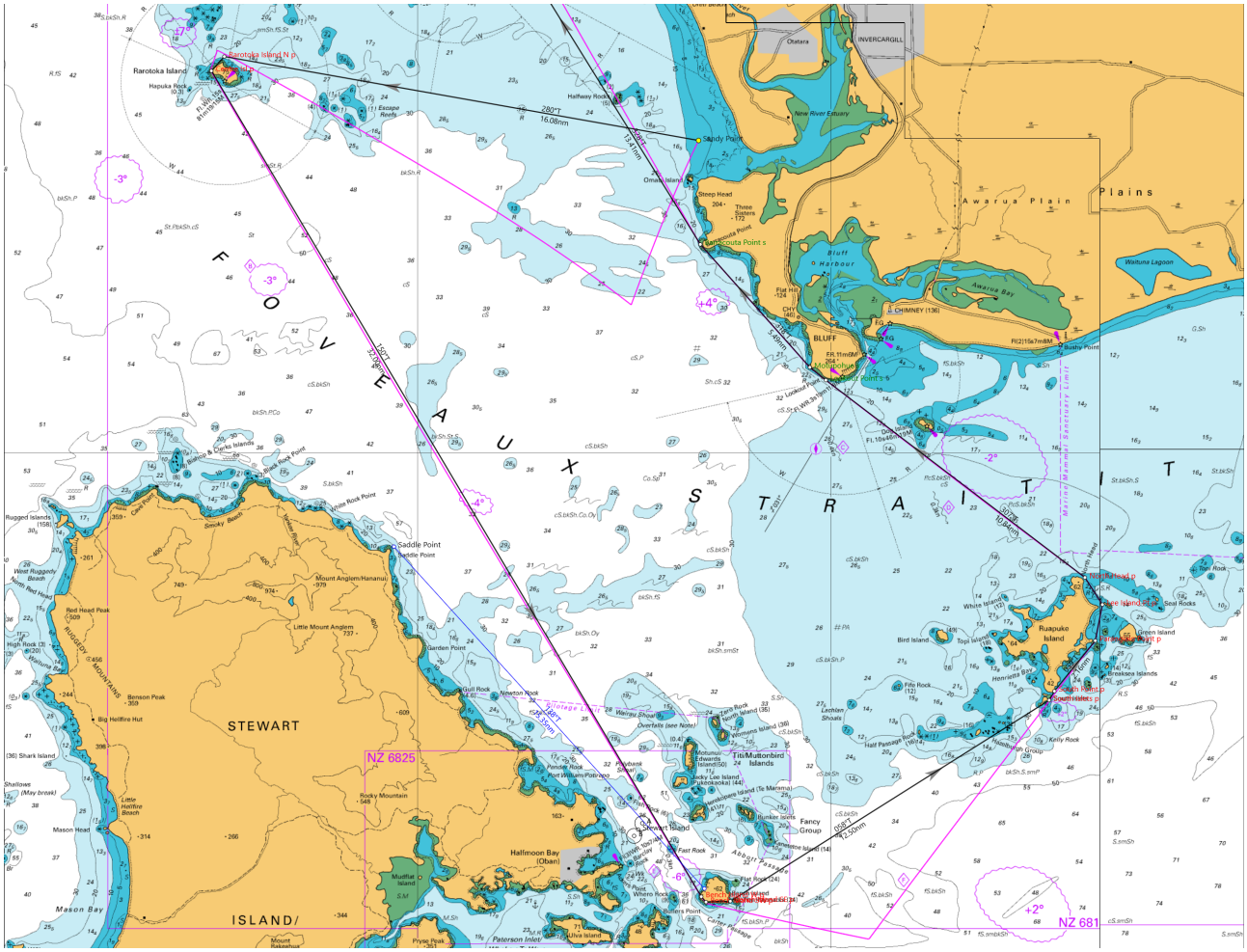
# Foveaux Strait Timed Race 2020

## Race 1375

In a timed race, like in every race, it is important to sail around the course in a perfect manner. At the same time it is also very important to pick a starting time that allows to sail in the most favorable conditions. This requires advanced planning. Rainbowchaser has asked me to explain my approach.

At times, especially if the race course is simple and just goes from here to there, like in the Iceland TR from Vestmannaeyjar to Stokksnes; you just have to look for strong winds from a favorable direction. But most timed races feature a round course where start and finish are close together. This is the case for the Foveaux TR that starts at Sandy Point to the South of New Zealand's South Island, leaving Centre (Rarotoka) Island, the Muttonbird Islands, in particular Bench Island, and Ruapuke Island to port, finishing in Riverton (outside the map below).

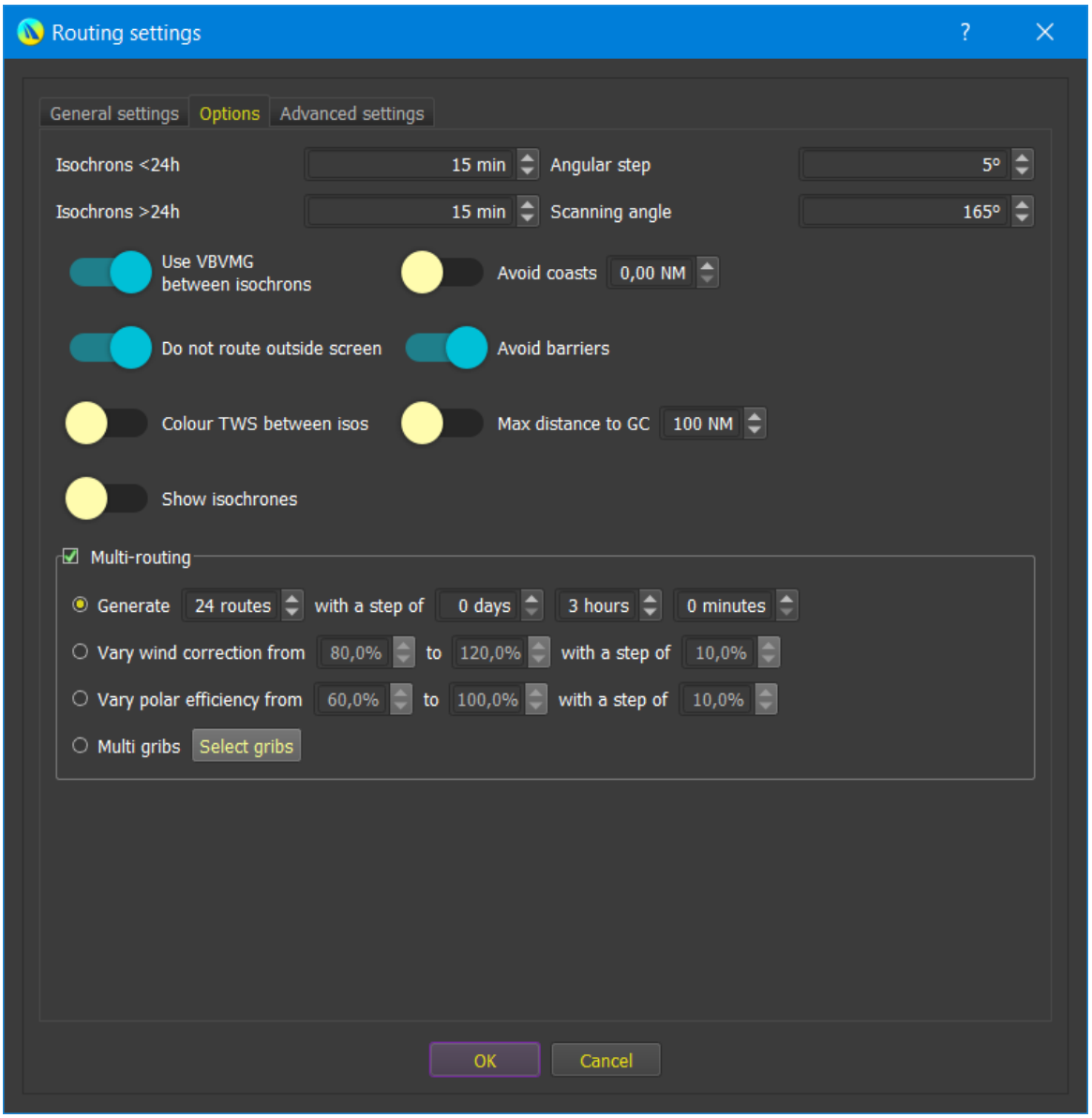



Strong reaching winds for the outbound leg may result in a slow beat back to the finish, or vice versa. My advice is to pay special attention to the slower parts of the course. The faster legs are just that, fast. Which means the contribute less to the overall elapsed time.

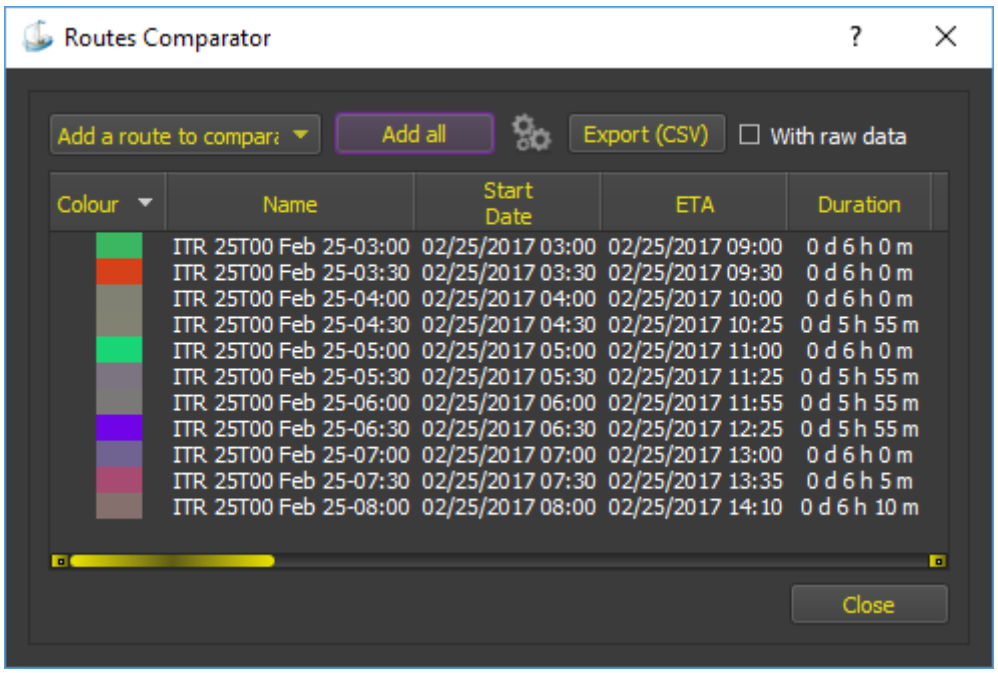
In a situation like this routing software can be put to good use. This may nor please the SOTP SOLers, but I can't help it. This software exists, and it is being used. I can just give a few hints of how it's done.

# Multi-Routing with qtVlm

The qtVlm router seems to be popular among SOLers. When you create a pathway for the race course, set a fixed start date and time and set the first (start) mark as the starting point. And of course, be sure to have the correct polar activated.
Each time a new grib file is available, you can start to compute routing, like usual. On the General settings tab of the Routing settings dialog be sure to disable “Routing from boat”. Activate “use a pathway” and pick the appropriate pathway for the race course. Either set a start date there, or modify the start time in the pathway settings.
In the top half of the Options tab of the Routing settings dialog you get to set the routing option as usual. Because the objective is to find a good starting window, and not to actually follow one of the routes, it is OK to be more liberal with the settings in order to speed up the calculation. Consider to use a larger time step or allow the routing algorithm to jump over land. Use your own judgment.




On the bottom half of the Options tab of the Routing settings dialog tick off the checkbox Multi-routing. Then select the number of routes and the time interval between routing starts. This is shown in the figure above.
An interval of two or three hours seems reasonable at first. If a promising starting window emerges, the computations can be repeated with a finer step between start times. Half an hour or even 15



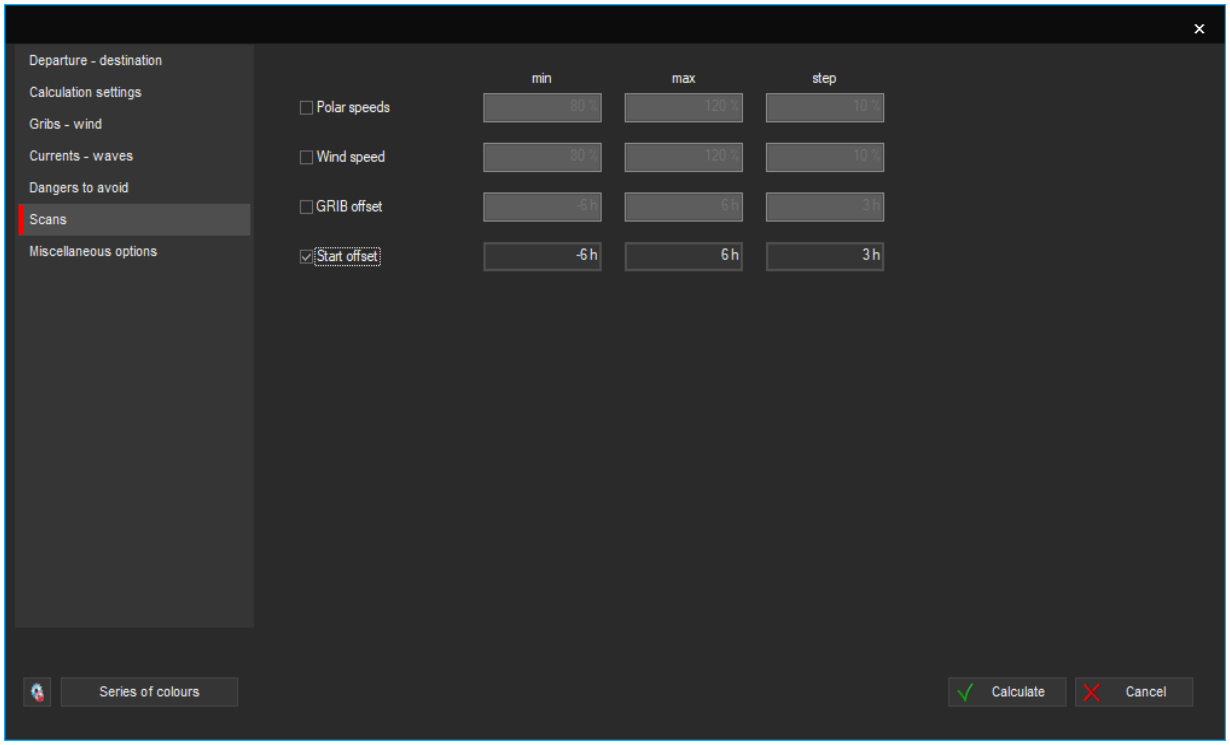

minutes seems reasonable, depending on conditions. I feel that anything less than 5 minutes does not make much sense, except in unusual circumstances. The weather does not change that fast and the computations are not that accurate anyway. All you can achieve is to increase your utility bill and contribute to global warming by using excessive amounts of electricity.

From the Routes menu you can select the Routes Comparator. An example is shown in the figure above (from an unpublished race report from some time ago). This comparison can be saved to a text file and loaded into a spreadsheet for further scrutiny.

The computations assume optimal conditions. No performance loss and perfect maneuvers. That can not be achieved. Therefore I tend to start a little earlier than the computed optimum, especially if the times deteriorate rapidly, for example after a frotal passage.

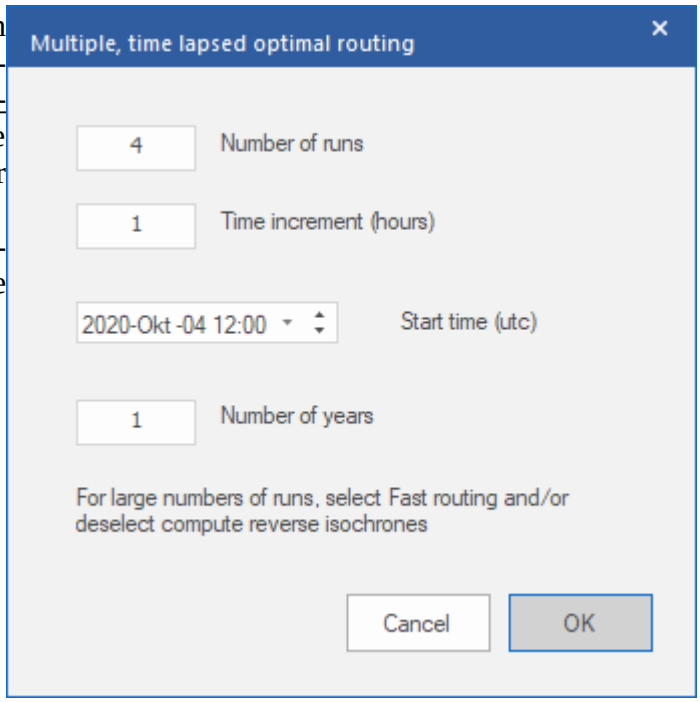
## Adrena

The optimal start time can also be determined with Adrena. The respective setting can be found on the Calculate menu when Scans is selected on the left.



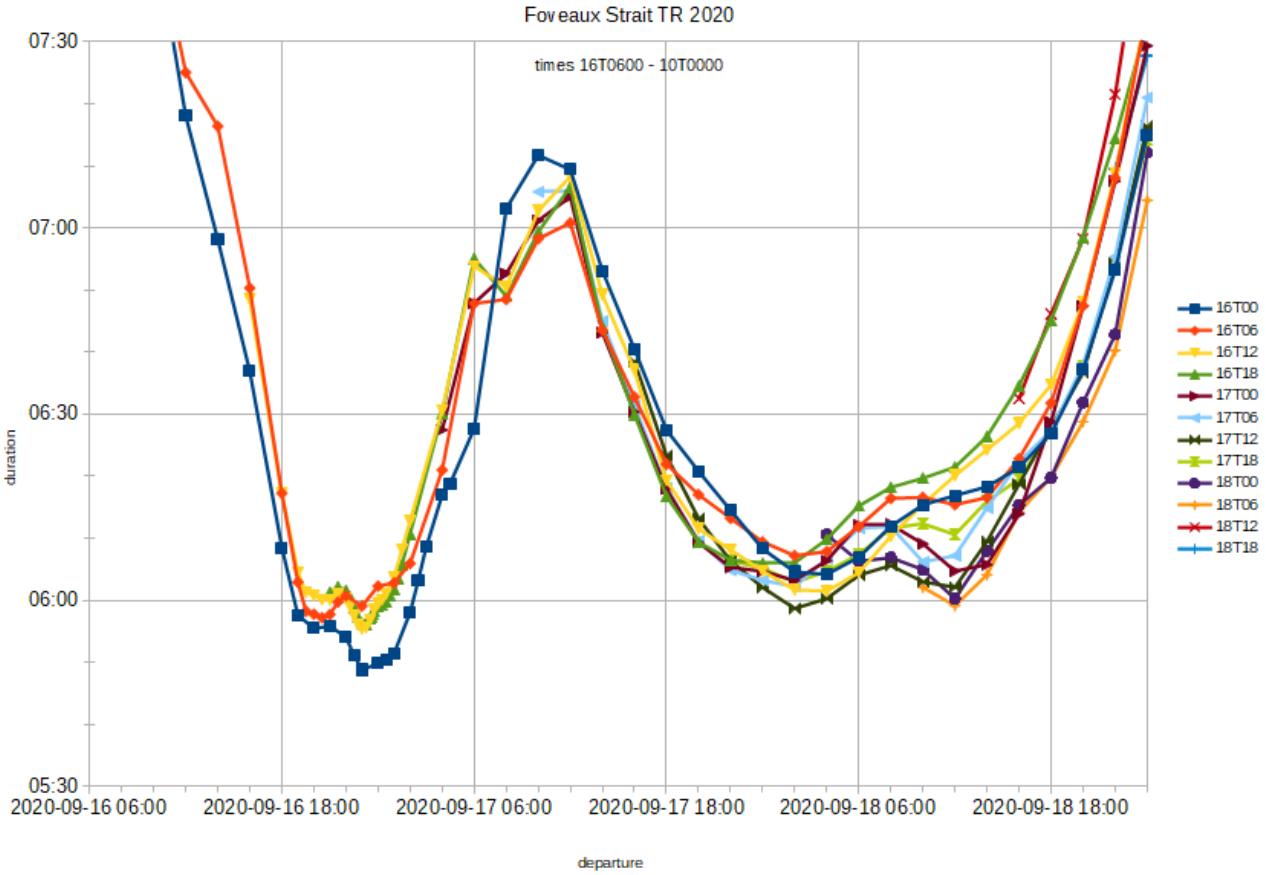
# Expedition

Multiple routes may also be calculated with Expedition. The principle is the same. You select Optimal on the ribbon. Clicking on Multiple opens the dialog shown on the right where the start time, time increment and the number of runs may be given.
In order to speed up the calculations it is advisable to enable Fast routing, and disable the Avoid Land options.

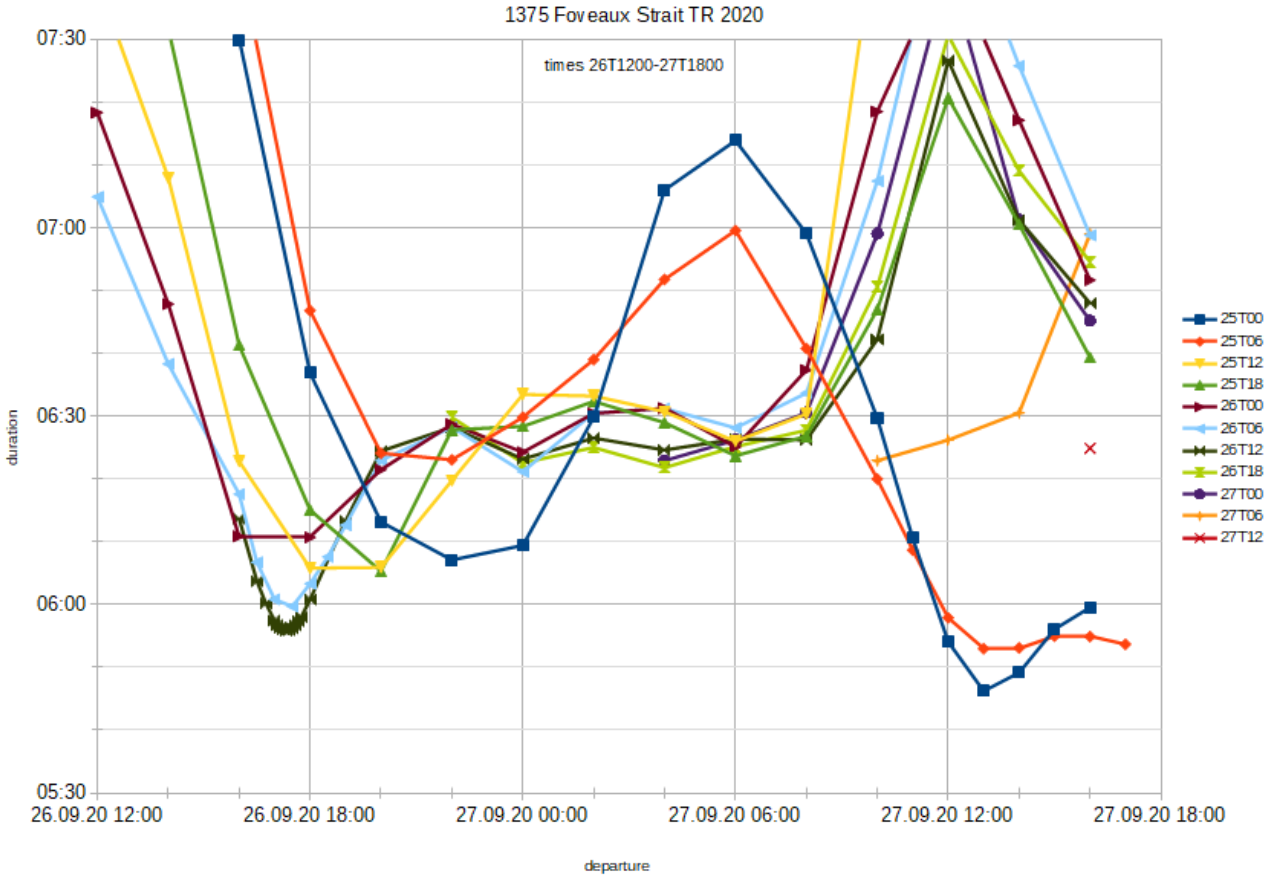



# Foveaux Strait run 1

The graph at the bottom of this page plots the predicted run times against the start time for various forecasts. An advantageous starting window with times less than 6 hours can be seen on Wednesday the 16th beginning at 18:00 until 02:00. The best time was predicted by the 04:30 WX on the 16th as 5:49 for a start at 23:00 (dark blue line with squares). With the 22:30 WX the best prediction deteriorated to 5:56 for a start at 23:10 (obscured green line with triangles).

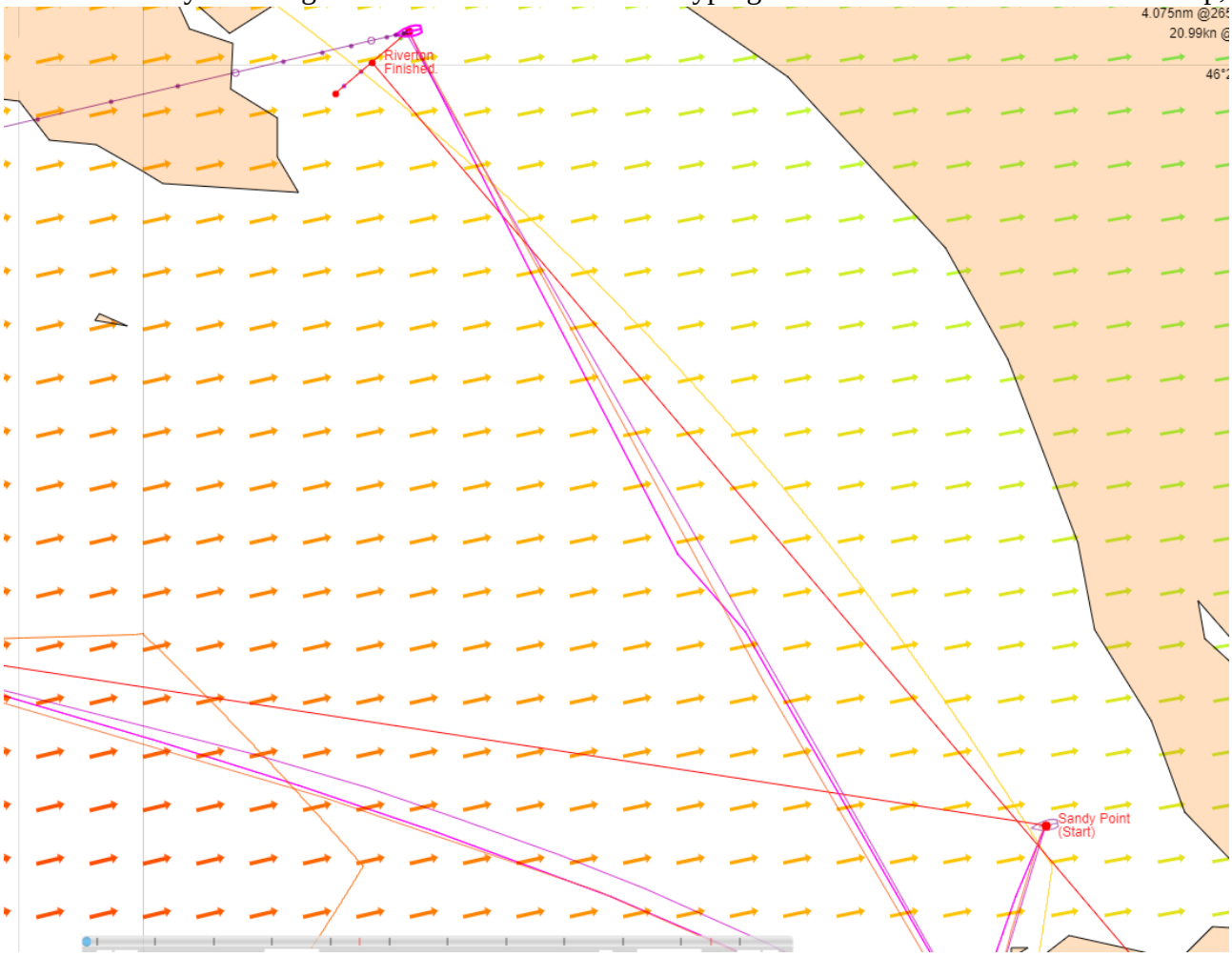


The start time was in the middle of the night in my UTC+01 timezone, but not during working hours. To allow for a less than perfect sail, I set a start DC for 23:05. My track is displayed as the magenta line on the first figure.
The wind was from the West-South-West (21.7 knots from 247° on average) and veering. Therefore I started towards the South to sail into the shift and get into the stronger breeze first. After a tack I could lay the first mark Centre Island. Next came a tack around Central Island and, after just 0.75 miles, a fast 100° TWA reach to Bench Island. Then I was beginning to regret that I had not done a practice run, because two course changes in quick succession means extra low performance at he start of the high speed leg, which in turn means slow recovery. In retrospect it might have been smarter to make the first tack a little earlier, so that there was enough time between the second tack and the bear away for the performance to recover. I seem to recall that rafa did just that.
The reach from Centre Island to Muttonbird/Bench Island allowed me to get some sleep. From there it was 15 minutes VMG run and then a gybe. Regrettably I failed to properly execute that two step gybe and consequently lost some time.
Three course changes were necessary to get around Ruapuke Island until turning North-West. This leg was presumably the slowest leg, because the next headland, Lookout Point could not be cleared on a max VMG course. It was not enough to warrant two successive tacks, just a small little bit. I started to pinch about 1 degree. Later I could crack off to 0.45° higher than target TWA.
The remaining legs were mostly straight line sailing with a finish at the favored northern end of the finish line.
My elapsed time of 5:58:29 was good enough for a preliminary second place, 31 seconds behind bonknhoot, who had started 5 minutes earlier, and 1:19 ahead of jhk1980, who had started another 10 minutes earlier. Until then these 3 boats were the only ones that had sailed the course in less than 6 hours. In summary, the choice of the starting window was very good, but my sailing was not.



# Foveaux Strait run 2

The following days I could relax because it did not look like the conditions would improve to warrant an other attempt. That changed with the 0600 forecast on Sunday the 20th. It promised the possibility of a run in less than 5:15 in one week. During the week, that window became less promising and shifted past the end of the two week race period. Beginning with the 1630 WX on Friday the 25th it appeared that an improvement would not be possible (see the above graph).
This changed again one day later with the 16:30 WX. A short start window appeared where run times less than 6 hours seemed to be possible again. The best prediction was 5:55, the same as for my first run. Because I had made some small mistakes during that first run, I felt that there was a small chance for an improvement and decided to try again, although the 17:20 start time conflicted with the start of the San Francisco Bay sprint race at 19:00. I approached this problem by putting an old laptop back to work and used one computer for each race. In the simultaneous third race (leg 8 of the A3) the boat was put on autopilot.
The weather situation was very similar to the one during the previous run. But the wind was slightly weaker and somewhat to the left (19 knots from 240°). I started the first beat again on starboard, but forgot to stay away from Centre Island. After the second tack and bearing away shortly afterwards the reach towards the Muttonbird Islands started again with painfully low performance. But then I had to switch my focus to the SF Bay sprint. It went quite well initially, until I tacked too early towards East Marin Island and eventually crashed into it. Back in the Foveaux Strait, I performed a better gybe than in run 1. With the good result of tha trun in mind, I performed the course changes around Ruapuke Island more aggressively. Because the wind was more to the left there was no need to go slow on the way to Point Lookout. Everything looked good for a fast run.
When the 22:30 WX came in, the boat was already on the last leg, approaching the finish. I tried to kept the leeward finish mark between the TWA and CC predictors by making small course adjustments manually. In doing so I must have made a small typing error that caused the boat to head up,



as can be seen on the track in the figure above. Before noticing, I switched my attention to the A3 race on the other computer, in order to take care of the latest weather forecast. When I eventually looked back, the boat was not heading towards anywhere near the finish line.
This little detour has probably cost me that one second that I again finished behind bonknhoot, who this time has started 1 minute later than me. So we were again first and second, this time with sassy in third place. Congratulations.

rumskib